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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09/520,609	03/07/2000	Hisashi Nagata	1035-254	9252

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EXAMINER
DUONG, THOI V

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 12/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/520,609	Applicant(s) NAGATA ET AL.	
	Examiner Thoi V Duong	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) *9-30,32,33 and 35-41* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,31 and 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *3, 5, 6*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other

DETAILED ACTION

Election/Restrictions

1. Applicants' election of Species I (claims 1, 3-8, 31 and 34) in Paper No. 8 is acknowledged. The Examiner agrees with the Applicants' judment to reclassify the respective species as follows:

Species I: claims 1, 3-8, 31 and 34 (Figs. 2, 4, 6 and 8)

Species II: claim 2 (Figs. 2, 4, 6 and 8)

Species III: claims 9-15, 28, and 35-37 (Fig. 17)

Species IV: claims 16-20, 29, 32, 33, 38 and 39 (Figs. 20 and 21)

Species V: claims 21-27, 30, 40 and 41 (Figs. 23, 25, 27, 29 and 31)

Accordingly, claim 2 is also examined along with the elected claims 1, 3-8, 31 and 34 since Species I and II are not distinct.

Drawings

2. Figures 9-13 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 5 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Bae (USPN 5,808,706).

As shown in Figs. 8-11, Bae discloses an active matrix substrate, comprising:

a plurality of pixel electrodes P1, P2, P3, P4 provided for each pixel constituted by a scanning line GL and a signal line DL that are disposed in a matrix as a whole;

a switching element TFT located near a point where the scanning line crosses the signal line, so as to be connected to the scanning line, the signal line, and the pixel electrode;

a storage capacitor electrode C3, C4 for constituting a storage capacitor with the pixel electrode therebetween; and

a storage capacitor common wire C3, C4 disposed parallel to the signal line, wherein the signal line, the storage capacitor electrode, and the storage capacitor common wire are fabricated from a single electrode layer through patterning thereof,

wherein the pixel electrode is disposed opposing the storage capacitor electrode across an insulation film 60 for covering the switching element and the insulation film is provided with a first contact hole 92 for connecting the pixel electrode to the switching element (Figs. 9 and 10) and a second contact hole for accommodating the pixel electrode to be disposed opposing the storage capacitor electrode (Figs. 9 and 11).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bae (USPN 5,808,706) in view of Ishida et al. (USPN 6,215,154 B1).

Bae discloses an active matrix substrate that is basically the same as that recited in claims 6-8 except for an interlayer insulation film provided on the insulation film. As shown in Fig. 5, Ishida discloses an active matrix substrate comprising a TFT 206, a storage electrode 85, a pixel electrode 74, an insulation film 88 which includes a first silicon oxide film 86 and a second silicon nitride film 87 (col. 7, lines 46-49). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the active matrix substrate of Bae with the teaching of Ishida by forming an insulating layer having two layers so as to prevent ion from migrating to the TFT.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bae (USPN 5,808,706) in view of Ono et al. (USPN 5,760,854).

Bae discloses an active matrix substrate that is basically the same as that recited in claim 4 except that the signal line, the storage capacitor common wire, and the storage capacitor electrode are not structured so as to include two deposited layers each constituted by either a transparent electrode film or a metal film. As shown in Fig.

[illegible]

laminated film comprising a first conductive layer d1 and a second conductive layer d2. Ono also discloses that the first conductive layer is formed of chromium and the second

conductive layer is formed of transparent conductive film ITO (col. 9, lines 33-45). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the active matrix substrate of Bae with the teaching of Ono by forming the signal line, the storage capacitor common wire, and the storage capacitor electrode of a laminated film composed of two deposited layers each constituted by either a transparent electrode film or a metal film to prevent line breakage and improve transmissivity for the display.

8. Claims 3 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bae (USPN 5,808,706) in view of Jeromin et al. (8.4: Application of a-Si Active-Matrix Technology in a X-Ray Detector Panel).

Bae discloses an active matrix substrate that is basically the same as that recited in claims 3 and 34 except for a storage capacitor electrode formed of a transparent conductive film and an image sensor comprising a conversion section for converting incident magnetoelectric radiation to electric charges and bias voltage application means for causing a storage capacitor to store the electric charges. In "Application of a-Si Active-Matrix Technology in a X-Ray Detector Panel" cited by Applicant, Jeromin discloses an active matrix substrate used in X-ray detector panel comprising amorphous selenium which converts x-ray photons into charge carrier pairs. Jeromin also discloses that the positive charges are collected in the storage capacitors of the pixels and are then read out charge amplifiers connected to the source lines (see Abstract). Further, Jeromin discloses that a storage capacitor shown in Fig. 2 is constructed from ITO transparent electrode (page 92, col. 2). Accordingly, a conversion section for converting

incident magnetoelectric radiation to electric charges and bias voltage application means for causing a storage capacitor to store the electric charges are to be employed in the X-Ray detector panel. Thus, with the teaching of Jeromin, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the active matrix substrate of Bae for using in an image sensor comprising a conversion section for converting incident magnetoelectric radiation to electric charges and bias voltage application means for causing a storage capacitor to store the electric charges.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attemps to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong

2/21/2002